

REMARKS/ARGUMENTS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Upon entry of the above amended and new claims, claims 1-8 and 10-19 will be pending. In view of the objection to claim 9, this claim has been canceled. However, new claims 15-17 are directed to specific embodiments of the thermoplastic sealing or connecting component of claim 6; claims 18 and 19 are directed to specific embodiments of the fashioned permanent connection of the object of claim 12.

Accordingly, no new matter is introduced by the amended or new claims.

The rejection of claims 3, 6 and 9, under 35 U.S.C. §102(b), as anticipated by Stewing, DE 35 23 771 A1, (DE 771), has been overcome. However, claims 3 and 6 are now rejected as being obvious (35 USC 103(a)), over DE 771. This rejection is respectfully traversed for at least the following reasons.

It appears that the basis for this rejection is the assertion that DE 771 discloses a process for forming a shrink-on sleeve which molds, stretches and relaxes a thermoplastic material. With all due respect, it is submitted that this is not an accurate characterization of the disclosure of DE 771.

A full English translation of the disclosure of DE 771 has been provided. Applicants have previously prepared a partial translation of the "Description" of this document. It appears that there is at least the following difference in these translations:

The PTO translations, translates the term "vernetzt" as "interlaced" whereas Applicants' translation, translates this term as "cross-linked." With the understanding that "interlaced" is synonymous with "cross-linked" Applicants do not take issue with the PTO's translation. If any other meaning is ascribed to "vernetzt" or "interlaced" Applicants assert that the translation is erroneous.

In this regard, the disclosure of DE 771 reveals that the thermoplastic materials are "vernetzt" during injection-molding with peroxides or other chemicals in the hot injection-molding machine (see translation at page 6, lines 1-2). Alternatively, the translation refers to the known production method in which a film strip is continuously extruded and is "interlaced" (i.e., cross-linked) thereafter by radiation or heat-treatment. Apparently, the

disclosure of DE 771 is designed to eliminate, *inter alia*, the separate irradiating arrangement (see translation at page 5, first paragraph).

Thus, as set forth in paragraph 3 of the translation of DE 771, “the invention provides a method ... wherein the shrink-on sleeves are injection molded as individual parts and are still interlaced in the injection molding tool, wherein the individual parts are stretched to a predetermined measure during the cooling process by using the injection molding heat.”

As such, it is respectfully submitted that the disclosure of DE 771 would not have suggested to one of ordinary skill in the art a process wherein a thermoplastic material is used to fashion a permanent connection. In DE 771, it is only a cross-linked thermoplastic (i.e., thermoset) material, which is fashioned into a shrink-on sleeve.

Accordingly, one of ordinary skill in the art, at the time this invention was made, would not have considered as *prima facie* obvious from DE 771, to fashion a shrink-on sleeve from a thermoplastic material, much less, from a thermoplastic elastomer material (which is not a cross-linked material).

Accordingly, the entire disclosure of DE 771 fails to provide evidence that claims 3 and 6 would have been *prima facie* obvious.

The deficiencies of DE 771 are not obviated by the “admitted prior art.”

The “admission” by Applicants is that thermoplastic elastomers are known (albeit with only a limited degree of deformation) to be used in a wide range of applications, including as shrink-on sleeves. However, the Examiner, erroneously, concludes from this, that it would have been obvious “that the thermoplastic in Stewing [DE 771] is a thermoplastic elastomer, because it is known in the art to use a thermoplastic elastomer when making shrink-on sleeving.”

Nothing in the Applicants’ disclosure indicates or suggests that the thermoplastic material used in the method of DE 771 as starting material is a thermoplastic elastomer and, certainly, not the final product. In fact, a common or standard material for shrink-on sleeves for cables is believed to be polyethylene (PE), which is a thermoplastic, not a thermoplastic elastomer. In this regard, the Examiner is directed to the enclosed copy of “Presentation On New Generation Cables & Accessories Embodying State-Of-The-Art Electron Beam Irradiation Cross-linking Technology” by Shri B. Bhattacharjee, (April 26, 2002). Ethylene-propylene-diene rubber (EPDM) which is a rubber, not a thermoplastic elastomer, is also

used for this purpose (see ¶¶4.2, 4.5 of Bhattacharjee). As explained by Mr. Bhattacharjee, and as acknowledged in DE 771, cross-linking is considered essential to achieve memory and shrink-on sleeve properties for thermoplastic materials. The cross-linking may also be by chemical means, e.g., peroxide cure (see ¶4.1 of Bhattacharjee).

Accordingly, it is respectfully submitted that the disclosure in DE 771 relates to thermoplastic, per se, as the starting material (rather than thermoplastic elastomer) and teaches that the thermoplastic material is cross-linked to achieve its capability as a shrink-on sleeve. Even if cross-linked polyethylene is referred to as a “thermoplastic vulcanizate” or “TPV” rather than as a “thermoset” resin, the terminology used in Applicants’ previous communication, it is still cross-linked and, does not become a thermoplastic elastomer. Therefore, even though the Examiner states that a thermoset material cannot be re-shrunk, a TPV can be shrunk and has a memory; the same is not true for the starting thermoplastic material.

The foregoing applies equally to EPDM rubbers as is evident from the disclosure of Bhattacharjee. Such material is crosslinked or vulcanized when molded. The TPVs and vulcanized rubbers are flexible materials, not inconsistent with the supposed requirement of DE 771.

Accordingly, even in light of the “admitted prior art” there is no evidence to suggest modifying the disclosure of DE 771 to replace the thermoplastic starting material in the reference with a thermoplastic elastomer nor is there any basis for finding a reasonable expectation of success in using a thermoplastic elastomer as the material to be crosslinked in the process of DE 771.

It is believed that the above addresses the rebuttal points raised in paragraphs 10 and 11 of the Office Action. To summarize, it is crosslinked thermoplastic materials which are used in DE 771 to form the shrink-on sleeves and, Applicants believe that these crosslinked materials are thermoset, but also would be flexible (if that is a requirement for the shrink-on wrapping of DE 771). The fact is that there is neither disclosure nor suggestion to replace the thermoplastic starting material with a thermoplastic elastomer and no motivation to do so is provided by the “admitted state of the art.”

With regard to paragraph 11, the Examiner assumes that once the material is out of the stretching mold it is less tense and rigid, therefore, “relaxed.” Further, since “it is

certainly the case the relaxed material ... is at ambient temperature at some point, such as during storage" the shrink-on sleeve is relaxed at room temperature.

Applicants respectfully disagree. According to the Examiner's scenario, the product of DE 771 will be relaxed before it reaches room temperature. DE 771 does not disclose a step of "relaxing" a component at ambient temperature.

In any event, regardless of the timing, duration, extent, temperature, of relaxing, the disclosures of DE 771 and the admitted prior art does not suggest or make obvious the subject matter of claims 3 and 6.

For any and all of the above reasons, withdrawal of the rejection of claims 3 and 6 over DE 771 and the admitted prior art is respectfully requested.

Reconsideration and withdrawal of the rejection of claims 1 and 7 under 35 USC 103(a) as unpatentable over the above combination of DE 771 and the admitted prior art, further in view of Danico, US 4,560,083, is respectfully requested for at least the following reasons.

The disclosures of DE 771 and admitted art are discussed fully above. Danico is relied on as evidence that exposing an elastomeric material to an elevated temperature allows the material to expand and create an effective seal.

It is respectfully submitted that the combined disclosures, even assuming, *arguendo*, that the combination is proper, would still not result in the claimed process.

First, while DE 771 discloses a process for producing a shrink-on sleeve from cross-linked thermoplastic polymer, there is no disclosure of a process for using the shrink-on sleeve. There is no disclosure of a process wherein a shrink-on sleeve (sealing or connecting member) is stretched, relaxed, placed at the desired location on a non-sealing member and exposed to an increased temperature of at most 20°C below the melting temperature of the material of the shrink-on sleeve (which, in any case, is not a thermoplastic elastomer).

Danico does not relate to a shrink-on sleeve or method for connecting cables. Therefore, and especially since DE 771 does not disclose or use thermoplastic elastomers, the practitioner of ordinary skill would not have been motivated to turn to Danico as bearing any relevance to the process of DE 771.

Still further, the practitioner would not have any expectation of success in modifying the disclosure of DE 771 in view of Danico. In this regard, the very teaching of Danico relied

on by the Examiner (expansion of elastomeric material to form an effective seal), would have dissuaded the practitioner from using a thermoplastic elastomer in the process of DE 771. A shrink-on wrapper forms an effective seal upon shrinking, not upon expanding, as is the case with the closure of Danico. That is, Danico relates to a heat-expansible gasket interposed between a closure assembly and a panel having an aperture to be covered. The aperture is securely closed and sealed by expansion of the gasket. This, of course, is not how a shrink-on sleeve would be used.

Accordingly, there is no basis for combining the disclosure of Danico with DE 771, nor is there any reasonable expectation of successfully adopting the heating procedure of Danico in the utilization of the shrink-on sleeve of DE 771.

Therefore, applying the test described in paragraph 12 of the Office Action, the teachings of the cited reference would not have led to the purported modification of DE 771 and would not have resulted in a process (or product) as claimed.

For the above reasons, withdrawal of the rejection of claims 1 and 7 is respectfully requested.

Reconsideration and withdrawal of the rejection of claims 2 and 13, under 35 USC 103(a), over the above combination of references, further in view of Schultze, *et al*, U.S. 6,001,464 (US 464) is respectfully requested for at least the following reasons.

The reliance on US 464 as evidence that it would have been obvious to use thermoplastic copolyetherester elastomers in the process and product of DE 771 is misplaced for the reasons noted above. DE 771 does not use a thermoplastic elastomer. Further, nothing in the disclosure of US 464 suggests that the thermoplastic elastomers should be crosslinked or what the result of such cross-linking would be. Therefore, since the process of DE 771 is specifically and only concerned with a process for forming shrink-on sleeves from cross-linked material, the practitioner would not have been motivated to apply the disclosure of properties of thermoplastic polyetherester elastomer films and/or segmented polyurethane elastomers, to the disclosure of DE 771.

Also, Applicants again submit that US 464 is "nonanalogous art" since it is not reasonably pertinent to the particular problem which DE 771 or the present Applicants were concerned. US 464 relates to breathable films and not to a connecting member. It is a far cry to refer to Applicants' own disclosure of the value and uses of thermoplastic elastomers and

to infer from a reference relating to different properties and uses that it would have been *prima facie* obvious to replace a thermoplastic material which is subjected to cross-linking with a thermoplastic elastomer which is not subject to cross-linkage and which has been modified to be breathable but which has no relationship with shrink-on sleeves.

Therefore, the rejection of claims 2 and 13 should be withdrawn.

The rejection of claims 4 and 14 under 35 USC 103(a) over DE 771, in view of the admitted prior art, and further in view of US 464 is similarly respectfully traversed.

These references have been considered above and all of the foregoing reasons why the references do not present evidence that the subject matters of claim 2, 3, 6 and 13, would have been *prima facie* obvious in view of DE 771 and the admitted prior art, in view of US 464, apply equally to claims 4 and 14.

Similarly, the rejection of claims 5, 9 and 11, under 35 U.S.C. §103(a), over DE 771 in view of the admitted prior art and Danico is respectfully traversed for substantially the same reasons as discussed above.

The rejection of claims 8 and 12, under 35 U.S.C. §103(a), over DE 771 in view of the admitted prior art, Danico and US 464, is respectfully traversed for at least the same reasons as set forth above.

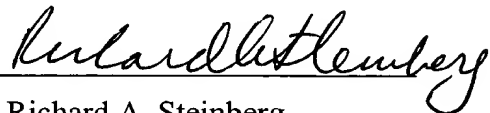
Generally, given the purpose of heating in Danico to cause foaming and expansion, it is not seen why one skilled in the art would have been motivated to turn to Danico as relevant to the use of the heat shrink-sleeve of DE 771.

In view of the foregoing, the claims are now believed to be in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,
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Attachment: Bhattacharjee reference